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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,439	07/17/2003	Norikazu Yamamoto	2003_0971A	1096

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EXAMINER

LEE, Y MY QUACH

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 02/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/620,439

Applicant(s)

YAMAMOTO, NORIKAZU

Examiner

Y Quach Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8-11,14,15,17, and 18 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,12,13 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7/17/03 & 12/18/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawing figures 3 and 12 to 14 are objected to because the reference numeral "34b" is pointing at an incorrect location. Note that the reference numeral "34b" as set forth in the specification is referring to a "common conductor".

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawing figure 18 is objected to as failing to comply with 37 CFR 1.84(p)(5) because it does not include the following reference characters "1" and "2" as mentioned on lines 6 and 7 of page 31 in the description.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities: Page 10, line 10, there is a typographical error such as the term "form" and should be changed to --from--. Page 14, line 21, there is a typographical error such as the term "unformed" and should be changed to --uniformed--. Page 17, line 5 and page 24, line 22, the reference numeral "28A" is incorrect

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and should be changed to --26A--. Page 17, line 6, the reference numeral "30" is incorrect and should be changed to --31-- in view of drawing figures 3, 12 and 15. Page 18, line 9, an expression "." should be inserted after the term "light" to complete the sentence. Page 24, lines 14 and 17, the reference numeral "51" is incorrect and should be changed to --52--. Page 24, line 23, there is a typographical error such as the term "shat" and should be changed to --shaft--. Page 29, line 4, the reference numeral "26" is incorrect and should be changed to --46--. Page 31, lines 13 and 15, the reference numeral "11b" is incorrect and should be changed to --11a-- in view of drawing figure 18. Page 35, line 19, the term "emission" is incorrect and should be changed to --incident-- in view of drawing figure 21. Page 35, line 20, the reference numeral "11b" is incorrect and should be changed to --11a-- in view of drawing figure 21. Page 36, line 9, the reference numeral "4" is incorrect and should be changed to --22A-- in view of drawing figure 22A. Appropriate correction is required.

Claim Objections

5. Claim 13 is objected to because of the following informalities: In claim 13, line 2 is misdescriptive and incorrect. It should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 5, 6, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mineto (JP 331520, prior art cited by applicant) in view of Doughty et al.

Mineto discloses a light guide plate (2) having a pair of light incident faces (left and right edge surfaces, figures 1 and 2a), a light emission face (top surface, figures 1 and 2a), a rotary member (4) adapted to be rotated along a rotary shaft (c) thereof and disposed opposite to the light incident face of the light guide plate, a rotary drive mechanism (figures 2b, 3b ...) for rotating the rotary member, a plurality of fluorescent lamps, each of the lamps comprising an arc tube having a straight tube shape extending in parallel to the rotary shaft and mounted on the rotary member with first and second electrodes of the lamps for exciting a discharge medium, the

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lamps capable of emitting light of respective different colors (R, G, B), the emitted light entering the light guide plate through the light incident face and emerging from the light emission face, a power feed control mechanism (figure 7) for applying a voltage to the first and second electrodes of each of the lamps, and a reflection member (8) disposed on the opposite side of the light incident face with respect to the rotary member and capable of reflecting the light emitted from each of the lamps toward the light incident face. However, Mineto does not disclose that the lamp having a mercury free discharge medium consisting essentially of a rare gas, and the rare gas including at least one kind of gas selected from the group consisting of krypton gas, argon gas, helium gas and xenon gas.

Doughty et al. teach a fluorescent lamp having a mercury free discharge medium (column 1, lines 30, 37) consisting essentially of a rare gas including xenon gas or krypton gas (column 3, lines 14 and 15, column 5, line 14, column 6, line 34) for providing high efficiency and high radiant emission. Since the fluorescent lamp of Doughty et al. is a mercury-free fluorescent lamp just as what is disclosed by Applicant, the light power does not depend on ambient temperature and reaches the desired level instantaneously after initiating the energization, the light intensity is stable and the power consumption is reduced.

It would have been obvious to one skilled in the art to modify the fluorescent lamps of Mineto with the mercury-free fluorescent lamp having discharge medium consisting essentially of a rare gas including xenon gas or krypton gas, as shown by Doughty et al., for achieving high efficiency and high radiant emission with stable light intensity while reducing the power consumption.

With regards to claim 6, it would have been obvious to one skilled in the art at the time the invention was made to include a rotary member mounted with the fluorescent lamps disposed opposing to each of the light incident faces of Mineto for the desirable purpose of simply providing greater and uniform light intensity to the light guide plate.

With regards to claim 9, Doughty states that the tube (14) of the mercury free fluorescent lamp needs not be straight (column 2, lines 28 to 29) and may have different cross sections. The shape of the tubes as claimed would have been an obvious matter of design choice which provides no unusual, unobvious and or unexpected result and is therefore deemed to fall within a

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purview of an ordinary engineering design technique to have different sizes and shapes for the tubes to suite different specifics of the intended applications.

8. Claims 10, 11, 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mineto (JP 331520, prior art cited by applicant) in view of Doughty et al.

Mineto discloses a liquid crystal display panel (P1), a back light device (1) mounted facing a rear surface of the display panel, the back light device comprising a light guide plate (2) having a pair of light incident faces (left and right edge surfaces, figures 1 and 2a), a light emission face (top surface, figures 1 and 2a), a rotary member (4) adapted to be rotated along a rotary shaft (c) thereof and disposed opposite to the light incident face of the light guide plate, a rotary drive mechanism (figures 2b, 3b ...) for rotating the rotary member, a plurality of fluorescent lamps, each of the lamps comprising an arc tube having a straight tube shape extending in parallel to the rotary shaft and mounted on the rotary member with first and second electrodes of the lamps for exciting a discharge medium, the lamps capable of emitting light of respective different colors (R, G, B), the emitted light entering the light guide plate through the light incident face and emerging from the light emission face, a power feed control mechanism (figure 7) for applying a voltage to the first and second electrodes of each of the lamps, and a reflection member (8) disposed on the opposite side of the light incident face with respect to the rotary member and capable of reflecting the light emitted from each of the lamps toward the light incident face. However, Mineto does not disclose that the lamp having a mercury free discharge medium consisting essentially of a rare gas, and the rare gas including at least one kind of gas selected from the group consisting of krypton gas, argon gas, helium gas and xenon gas.

Doughty et al. teach a fluorescent lamp having a mercury free discharge medium (column 1, lines 30, 37) consisting essentially of a rare gas including xenon gas or krypton gas (column 3, lines 14 and 15, column 5, line 14, column 6, line 34) for providing high efficiency and high radiant emission. Since the fluorescent lamp of Doughty et al. is a mercury-free fluorescent lamp just as what is disclosed by Applicant, the light power does not depend on ambient temperature and reaches the desired level instantaneously after initiating the energization, the light intensity is stable and the power consumption is reduced.

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It would have been obvious to one skilled in the art to modify the fluorescent lamps of Mineto with the mercury-free fluorescent lamp having discharge medium consisting essentially of a rare gas including xenon gas or krypton gas, as shown by Doughty et al., for achieving high efficiency and high radiant emission with stable light intensity while reducing the power consumption.

With regards to claim 15, it would have been obvious to one skilled in the art at the time the invention was made to include a rotary member mounted with the fluorescent lamps disposed opposing to each of the light incident faces of Mineto for the desirable purpose of simply providing greater and uniform light intensity to the light guide plate.

With regards to claim 18, Doughty states that the tube (14) of the mercury free fluorescent lamp needs not be straight (column 2, lines 28 to 29) and may have different cross sections. The shape of the tubes as claimed would have been an obvious matter of design choice which provides no unusual, unobvious and or unexpected result and is therefore deemed to fall within a purview of an ordinary engineering design technique to have different sizes and shapes for the tubes to suite different specifics of the intended applications.

9. Claims 3, 4, 7, 12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claim 13 would be allowable if rewritten to overcome the objection set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Green is cited to show other pertinent liquid crystal display panel having a backlight device comprising red, green and blue fluorescent lamps disposed opposite to a light incident face of a light guide plate. Tachihara et al. is cited to show other pertinent rotary light guide plates with a fluorescent lamp.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Y Quach Lee whose telephone number is 571-272-2373. The examiner can normally be reached on Tuesday and Thursday from 8:30 am to 4:30 pm.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Customer Service whose telephone number is 571-272-2815.

Y. Q.
February 15, 2005



Y Quach Lee
Patent Examiner
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